

well shown. The junction of the narrow tail with the masses changed its position, while the cloud-like masses themselves changed their relative position angles, and apparently were moving faster southward than the comet. At the same time they were receding from it. In a changed form, they are still visible on the photographs of the 16th and 17th. What I wish specially to call attention to are the streamers or secondary tails that issue from these masses. They are specially well shown on slide 14 (with the 3·4-inch lens), reproduced on Plate 3.

It would appear from the light-pressure theory that the large receding masses consist of large and small particles, and that the smaller ones are being driven away from the others with a very much greater velocity by the pressure of the Sun's light. These smaller outgoing particles, therefore, form the streams or secondary tails shown going out from the masses.

Yerkes Observatory :
1908 October 24.

Note on Comet c 1908 (Moorhouse), 1908 September 29–October 2.

By the Rev. W. Sidgreaves, S.J., and the
Rev. A. L. Cortie, S.J.

The comet has been photographed on every available night since September 29 at the observatory with a Dallmeyer portrait lens of 6-inch aperture and 30-inch focal length, the generous gift of Mr. Whitelow, F.R.A.S. Pending a full discussion of the photographs, the more remarkable changes in the object between the dates named are set down here.

Plate.	Date of Middle of Exposure. G.M.T.			Length of Exposure. Minutes.	Length of Tail on Plates.
		h	m		
1	1908 Sept. 29	9	7·5	45	2° 40'
2	30	7	45	40	3° 2'
3	30	9	20	30	3° 15'
4	Oct. 1	7	42·5	35	3° 49'
5	1	8	47·5	55	3° 27'
6	1	11	21	30	2° 40'
7	2	10	47·5	55	No tail

In the photographs of September 29, 30, the nucleus showed no central condensation, the tail was slightly curved on one side, and possessed a bright central core or axis. This bright central ray

gradually disappeared, the measures of its length being 35', 23', and 11' on plate 1 of September 29 and plates 2-3 of September 30. In plate 3 the nucleus was more stellar in appearance. Accompanying the recession of the bright core, the tail seemed to grow longer. On plate 4 of October 1 the bright axis had disappeared, but at a distance of 1° 1' measured from the centre of the nucleus was situated a condensation, the tail between the nucleus and condensation being faint, and the secondary tail, of which the condensation was a sort of head, being brighter and wider.

The position of the condensation from the centre of the nucleus was also measured on plates 5 and 6 of the same night with the following result :—

	h m	° ' "
At G.M.T. (1)	7 42·5	distance = 1 1 0
(2)	8 47·5	,, = 1 10 0
(3)	11 21	,, = 1 32 40

The times given are the middles of the intervals of exposures. From (1) and (2) the average velocity of recession is 8"·30 per minute. From (2) and (3) the average velocity is 8"·86 per minute. Hence it follows that between the mean epochs of (1) and (2) and (2) and (3) the mean rate of increase of velocity as measured on the plates was '005" per minute per minute. The skies having been very hazy, the images on the plates are faint and the measures difficult to make. The images stand no magnification with a lens, so it was only possible to place pointers on them and transfer the distances to a millimetre scale. The measures are therefore only approximate. They seem to show, however, a real acceleration of matter from the head of the comet under a constant force. Also, that the bright condensation measured, was formed as the bright axis disappeared. On October 2 there was no trace of any tail on the plate exposed for 55 minutes. We should have attributed this to the haziness of the sky, had not M. Bigourdan, at the meeting of the Paris Academy of Sciences of October 5 (*Nature*, October 15, 1908), reported that on October 1 the tail had disappeared, and that traces of the tail were noted on October 3. The table given above shows a constant decrease in the length of the tail on the plates of October 1, which we had attributed to the increasing fog and haze in the sky.

Stonyhurst College Observatory :
1908 November 9.

56 *Real Paths of Brilliant Meteors observed in 1908.* LXIX. I,*Real Paths of Brilliant Meteors observed in 1908.*
By W. F. Denning.

The following are the real paths of brilliant meteors observed in England (except No. 3 recorded in Holland and Belgium) and computed by me during the present year. I gave a few details of several fireballs which appeared in 1907 in *The Observatory* for June 1908.

As far as I can judge, a rather unusual number of large meteors have been seen and described during the last two years, but in many cases the accounts have been isolated, so that definite results as to the height, etc. could not be ascertained.

The Perseids were fairly rich in 1908, and included a large proportion of bright objects, several of which were recorded at two stations. At Bristol the first Perseid was noticed on July 21, the last on August 19. The extreme limits of visibility of the shower appear to be from July 7 to August 25, with a radiant moving to E.N.E. from $7^{\circ} + 44^{\circ}$ to $66^{\circ} + 59^{\circ}$. But minor systems are somewhat involved with the true Perseids, and it is occasionally difficult to separate them from Cassiopeids and Camelopardids in the earlier and later stages of the display.

Date.	G.M.T.	Mag.	Height		Path. Miles.	Velocity per sec. Miles.	Radiant. α δ
			at first. Miles.	at end. Miles.			
1908.	May 17	> 9	76	28	57	15	$194 + 20^{\circ}$ Coma Berenicid
			19	10	45	142	$252 - 20^{\circ}$ α Scorpид
			27	12	55	120	$76 + 43^{\circ}$ α Aurigid
June 25	10 43	> 1	61	59	51	30	$43 + 37^{\circ}$ β Perseid
			28	11	45	84	$237 - 18^{\circ}$ η Librid
July 1	9 15	$\frac{1}{2} = D$	61	27	105	18	$250 - 20^{\circ}$ α Scorpид
			28	11	6	82	$302 + 23^{\circ}$ η Sagittid
Aug.	10 26	> 1	82	54	50	25	Perseid
			2	10	30	38	Perseid
	10 30	$\frac{1}{4}$	77	47	57	38	Perseid
			2	11	2	40	Perseid
	10 17	$\frac{1}{4}$	79	55	40	34 + 54	Perseid
			2	12	7	32	$337 - 11^{\circ}$ δ Aquarid
Sept. 14	9 44	> 1	72	45	52	29	43 + 57 Perseid
			11	11	52	93	46 + 59 Perseid
	8 48	2×9	90	51	61	35	Perseid
			14	9	10	...	$44 + 57^{\circ}$ Perseid
Oct. 14	8 48	> 9	59	32	71	...	$6 + 7^{\circ}$ γ Pegasid
			70	18	96	24	$42 + 20^{\circ}$ ϵ Arietid